

# HAMILTON, BROOK, SMITH & REYNOLDS, P.C.

## UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under  
37 C.F.R. 1.53(b))

Attorney Docket No.

2825.1018-010

First Named Inventor or  
Application Identifier

Todd R. Golub

Express Mail Label No.

EL930599018US

Title of  
Invention

METHODS FOR CLASSIFYING SAMPLES AND ASCERTAINING PREVIOUSLY  
UNKNOWN CLASSES

### APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

ADDRESS TO:

Assistant Commissioner for Patents  
Box Patent Application  
Washington, D.C. 20231

1. ☒ Fee Transmittal Form  
(Submit an original, and a duplicate for fee processing)
2. ☒ Specification **Total Pages 70**  
(preferred arrangement set forth below)
  - Descriptive title of the invention
  - Cross References to Related Applications
  - Statement Regarding Fed sponsored R & D
  - Reference to sequence listing, a table, or a computer program listing appendix
  - Background of the Invention
  - Brief Summary of the Invention
  - Brief Description of the Drawings (if filed)
  - Detailed Description
  - Claim(s)
  - Abstract of the Disclosure
3. ☒ Drawing(s) (35 U.S.C. 113) **Total Sheets 18**  
☐ Fig. of the Drawings for Publication ☐  
☒ No Figure to be Published
4. ☒ Oath or Declaration **Total Pages 3**
  - a. ☐ Newly executed (original or copy)
  - b. ☒ Copy from a prior application (37 C.F.R. 1.63(d))  
(for continuation/divisional with Box 17 completed)
    - i. ☐ **DELETION OF INVENTOR(S)**  
Signed statement attached deleting inventor(s) named in the prior application, see 37 C.F.R. 1.63(d)(2) and 1.33(b).
5. ☐ CD-ROM or CD-R in duplicate, large table or Computer Program (Appendix)

6. ☐ Nucleotide and/or Amino Acid Sequence Submission  
(if applicable, all necessary)
  - a. ☐ Computer Readable Form
  - b. ☐ Paper Copy (identical to computer copy)  
☐ Pages
  - c. ☐ Statements verifying identity of above copies

### ACCOMPANYING APPLICATION PARTS

7. ☐ Assignment Papers (cover sheet & documents)  
☒ Assignees -  
 Whitehead Institute for Biomedical Research, Cambridge, MA  
 Dana-Farber Cancer Institute, Inc., Boston, MA
8. ☐ Power of Attorney ☐ 37 C.F.R. 3.73(b) Statement
9. ☐ English Translation Document (if applicable)
10. ☒ Information Disclosure Statement (IDS)/PTO-1449 ☐ Copies of IDS Citations
11. ☐ Preliminary Amendment
12. ☒ Return Receipt Postcard
13. ☐ Small Entity ☐ Statement filed in prior application,  
Statement(s) status still proper and desired
- 14a. ☐ Foreign Priority Claim under 35 U.S.C. §119 or 365
- 14b. ☐ Certified Copy of Priority Document(s)
15. ☐ Nonpublication Request (check parent application)
16. ☒ Other Remarks and copy of IDS citation AV7

17. If a **CONTINUING APPLICATION**, check appropriate box; supply the requisite information.

☐ Continuation ☒ Divisional ☐ Continuation-in-part (CIP) of prior application No.: 09/544,627

Prior application information: Examiner: M. Zeman

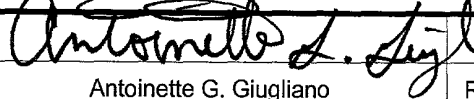
Group Art Unit: 1631

The entire disclosure of the prior application is considered a part of the disclosure of the accompanying application and is hereby incorporated by reference.

(Add standard Related Applications section with incorporation by reference to specification or update same)

### 18. CORRESPONDENCE ADDRESS

NAME	Customer No. 021005				
	HAMILTON, BROOK, SMITH & REYNOLDS, P.C.				
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COUNTRY	USA	TELEPHONE	(978) 341-0036	FAX	(978) 341-0136

Signature		Date	2/12/02
Submitted by Typed or Printed Name	Antoinette G. Giugliano	Reg. Number	42,582

# HAMILTON, BROOK, SMITH & REYNOLDS, P.C.

<b>FEE TRANSMITTAL FOR PATENT APPLICATIONS</b>	Attorney Docket Number	2825.1018-010
	Application Number	Divisional of 09/544,627
	First Named Inventor	Todd R. Golub

CLAIM CALCULATION (includes any preliminary amendment)

CLAIMS	(1) FOR	(2) NUMBER FILED	(3) NUMBER EXTRA	(4) RATE	(5) CALCULATIONS
	TOTAL CLAIMS (37 CFR 1.16(c) or (j))	70 - 20* =	50	x \$ 18 =	\$ 900
	INDEPENDENT CLAIMS (37 CFR 1.16(b) or (i))	11 - 3** =	8	x \$ 84 =	\$ 672
	MULTIPLE DEPENDENT CLAIMS (if applicable) (37 CFR 1.16(d))			+ \$ 280 =	\$
				BASIC FEE (37 CFR 1.16(a) or (h))	\$ 740
				Total of above Calculations =	\$ 2312
	Reduction by 50% for filing by small entity (37 CFR 1.9, 1.27, 1.28) =				\$
				TOTAL =	\$ 2312
	Surcharge - Late Filing of Declaration or Filing Fees (37 C.F.R. 1.16(e)) =				\$
	Petition for Extension of Time Fee (37 C.F.R. 1.17) =				\$
	Assignment Recordation Fee = (only when filed with application)				\$
	* Reissue claims in excess of 20 and over original patent ** Reissue independent claims over original patent			TOTAL =	\$ 2312

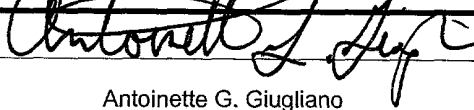
1. Small entity status:

- a. ☐ A small entity statement is enclosed.
- b. ☐ A small entity statement was filed in the prior non-provisional application and such status is still proper and desired.
- c. ☐ Is no longer claimed.

2. ☒ A general authorization is hereby granted to charge deposit account number 08-0380 for any fees required under 37 CFR 1.16 and 1.17 in order to maintain pendency of this application. A copy of this authorization is enclosed for accounting purposes.

3. ☒ A check is enclosed for \$2,312. ☐ Please charge \$[ ] to Deposit Account No. 08-0380.

4. ☐ Other: \_\_\_\_\_

Signature		Date	2/12/02
Submitted by Typed or Printed Name	Antoinette G. Giugliano	Reg. Number	42,582

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Todd R. Golub, Eric S. Lander, Jill Mesirov, Donna Slonim, and  
Pablo Tamayo

Divisional of:

Application No.: 09/544,627  
Filed: April 6, 2000

Title: METHODS FOR CLASSIFYING SAMPLES AND ASCERTAINING PREVIOUSLY  
UNKNOWN CLASSES

Date: 2/12/02

EXPRESS MAIL LABEL NO. EL930599018US

REMARKS

Box PATENT APPLICATION  
Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

The above-captioned application is a divisional of application number 09/544,627 filed on April 6, 2000 to which priority is claimed under 35 U.S.C. §120.

The related applications paragraph has been revised to include the parent application.

Claims 1-13, 28-33, 67-82, 99-106, 108-117 of U.S. Application No.: 09/544,627, as originally filed, have been omitted and remaining Claims 14-27, 34-66, 83-98, 107, 118-123 have been renumbered sequentially beginning with Claim 1. No new matter has been added.

The instant specification includes claims from Groups III, IV, and VI of the restriction requirement made in the parent case, U.S. Application No. 09/544,627. According to the Examiner, the claims of Group III relate to methods of assigning samples to a class based on a weighted voting analysis, the claims of Group IV are drawn to methods of determining a weighted vote for one or more informative genes, and the claims of Group VI are drawn to methods of classifying a sample based upon gene expression for one or more genes, combined with a model built using a weighted voting analysis. Applicants request that the claims of Groups III, IV, and VI be examined together for the following reasons.

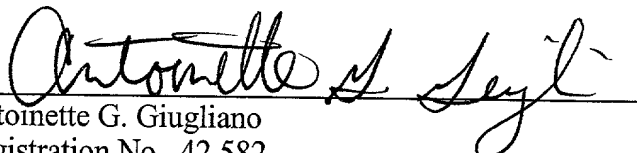
The claims of Groups III, IV, and VI are not both independent and distinct. The claims of Groups III, IV, and VI are not independent because there is a disclosed relationship between two or more subjects disclosed, that is, the subject matter of the groups is connected in operation and effect. The claims of Groups III, IV, and VI are related in operation and effect because they all relate to either classifying a sample based on an analysis of gene expression data performed with a weighted voting scheme (Groups III and VI), or building a model using a weighted voting scheme and gene expression data (Group IV). They are connected in operation and effect because the methods of Group IV result in a weighted voting scheme model that is used to classify samples or assign samples to a class, as set forth in the methods of Groups III and VI. The Claims of Group III and VI clearly indicate that a weighted voting model based on gene expression data is used to classify the samples. Similarly, Groups III and VI are connected in operation and effect because they both use a weighted voting scheme to classify samples based on the gene expression data. The Examiner even grouped claims of Groups III and VI together in the same classification, Class 700, which indicates that the claims are related. Group IV belongs to a closely related class, Class 702. The class definition for Class 700 specifically indicates that class 702 is a related class (See U.S. PTO website). 35 U.S.C. §121 requires a two-pronged test, namely that the inventions be both independent and distinct for a restriction to be proper. Accordingly, even if the Examiner determines that the inventions are distinct, a restriction would not be proper because the applicants have demonstrated that the inventions are not independent for the reasons described above.

Combining the claims of Groups III, IV, and VI would not place a serious burden on the Examiner. A search strategy that identifies art references related to methods for building a weighted voting scheme based on gene expression data would also undoubtedly identify references that relate to methods for assigning samples to a class or classify samples using the weighted voting scheme based on gene expression data. For example, a reference that may discuss classification of a sample will likely also discuss how the classification was done. As a result, the Examiner would not be placed under an undue burden if the above-mentioned claims were combined. Hence, Applicants respectfully request examination of the claims of these groups in one application.

Pursuant to 37 C.F.R. 1.63(d)(4), please note that a Notice of Change of Correspondence Address was submitted in parent Application No. 09/544,627. Please send all correspondence in the above-identified continuation application to: Customer No. 021005; Hamilton, Brook, Smith & Reynolds, P.C., 530 Virginia Road, P.O. Box 9133, Concord, Massachusetts 01742-9133. In addition, please direct all telephone calls to the undersigned or Lisa M. Treannie at (978) 341-0036, and all facsimile communications to (978) 341-0136.

Respectfully submitted,

HAMILTON, BROOK, SMITH & REYNOLDS, P.C.

By   
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Dated: 2/12/02